



Calderbank 19-6-42

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

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Patent Application

Inventor(s)	Arthur Robert Calderbank Ayman Naguib Nambirajan Seshadri	Case Name	Calderbank 19-6-42
Filing Date	4/28/1999	Serial No.	09/300,494
Examiner	Chieh M Fan	Group Art Unit	2634
Title	Combined Channel Coding and Space-Time Block Coding in a Multi-Antenna Arrangement		

COMMISSIONER FOR PATENTS

P.O. Box 1450  
Alexandria, VA 22313-1450

SIR:

Request For Reconsideration and Petition Under Rule 37CFR 1.83

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or, in the alternative,

Petition Under Rule 137(4)(b)

A Notice of Abandonment was sent by the PTO on December 12, 2003

The Notice asserts that applicants failed to timely file a response to the Office action dated April 23, 2003. Factually, that was not correct, because applicants filed a response, by facsimile transmission, on July 31, 2003, including a petition for an extension of time.

On December 18, 2003, applicants filed a Petition to Withdraw the Holding of Abandonment, demonstrating that the aforementioned July 31, 2003 response was sent to, and received by, the PTO.

On April 8, 2004 a Decision on the Petition was sent to applicants, denying the Petition. The petition was denied because the response, though it was received by the PTO and through no fault of the applicants was "not matched with the application file" by the PTO, was not responsive.

It turns out that not only was applicants' response received by the PTO, some action was taken; specifically, a review of the response. A Legal Instruments Examiner determined that a complete listing of all of the claims was not present. As an aside the set

of claims that the Legal Instruments Examiner reviewed is the same set of claims that was presented to the Examiner in a previous Office Action response, and the Examiner did not point out the problem at that time. Unfortunately, the last response merely repeated the mistake of the previous response. As a further aside, the mistaken listing did not miss any claims. It merely failed to identify the status of the claims that are already NOT in the case.

Substantively, the last amendment placed that case is in condition for allowance.

Applicants respectfully request reconsideration of the decision reached in the aforementioned petition to withdraw holding of abandonment. But for the failures by the PTO, one of which directly relates to the technical Rule that is relevant to the issue at hand (that of presenting a complete set of claims) the case would surely have been issued.


*Because of the extraordinary situation presented herein, applicants respectfully request that, pursuant to 37 CFR 1.183, in the interest of justice, the Rule or Rules that pertain to this matter be suspended for this time.*

In the alternative, applicants respectfully request that the application be revived under Rule 137(4)(b). A complete set of claims that should have been included in the previous Office action response is included.

The appropriate fee for the petition under Rule 183 is enclosed in the form of a check. It is earnestly believed that this petition ought to be granted. However, should it not, and the petition under Rule 137 is to be granted, the enclosed fee will be insufficient. In such an event, the Commissioner is hereby authorized to charge the deficiency to the Deposit Account of the undersigned, No. 500732.

Respectfully,  
Arthur Robert Calderbank  
Ayman Naguib  
Nambirajan Seshadri

Dated: 4/23/04

By   
Henry T. Brendzel  
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IN THE CLAIMS:

1. (Canceled)

2. (Canceled)

3. (Currently Amended) A transmitter comprising:

a demultiplexer responsive to an applied input signal for developing a L plurality of ~~at least two~~ signal streams, and

L ~~a like~~ plurality of channel coding/space-time coding transmitters, each responsive to a different signal stream of said plurality of signal streams, and each carrying out channel coding followed by space-time coding, said channel coding/space-time coding transmitters developing rates  $R_i$   $i=1,2,...,L$ , that are not identical to each other.

4. (Currently Amended) The transmitter of claim 3 where each of said channel coding/space-time coding transmitters comprises:

a channel coding encoder of rate  $R_i$ ,

a space-time encoder responsive to output signal of said channel ~~code~~ coding encoder,

a mapper and pulse shaping circuitry responsive to said space-time encoder, and pulse shaping circuitry responsive to said mapper, and

at least two antennas for transmitting a space-time coded signal created by said space-time encoder mapped by said mapper, and conditioned by said pulse shaping circuitry.

5. (Canceled).

6. (Currently Amended) The transmitter of claim 4 where said ~~demultiplexer develops an L plurality of signal streams, where said channel coders in said L channel coding/space-time coding transmitters develop~~ rates  $R_i$   $i=1,2,...,L$ , ~~that~~ are such that  $R_1 > R_2 > ... > R_L$

**7. (Currently Amended)** The transmitter of claim **4** where said channel ~~code~~ coding encoder performs trellis encoding.

**8. (Currently Amended)** The transmitter of claim **4** where said channel ~~code~~ coding encoder performs convolutional encoding.

**9. (Canceled)**

**10. (Canceled)**

**11. (Withdrawn)**

**12. (Withdrawn)**

**13. (Withdrawn)**

**14. (Withdrawn)**

**15. (Currently Amended)** A transmitter comprising:  
a demultiplexer responsive to an applied input signal for developing an  $L$  ~~plurality~~  
~~of at least two~~ signal streams where  $L$  is at least two, and  
 $L$  a like plurality of channel coding encoders  $i=1,2,\dots,L$ , each responsive to a  
different one of said plurality of signal streams and developing codes at  $R_i$ , where the rates  
for different values of index  $i$  are not identical to each other, and  
 $L$  a like plurality of a space-time coding transmitters, each responsive to a different  
one of said channel coding encoders.

**16. (Currently Amended)** The transmitter of claim **15** where each of said space-time coding transmitters comprises:  
a space-time encoder responsive to input signal of said space-time coding transmitter,

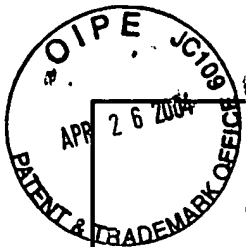
a mapper and pulse shaping circuitry responsive to said space time-encoder, and  
~~pulse-shaping circuitry responsive to said modulator, and~~  
at least two antennas for transmitting a space-time coded signal created by said  
space-time encoder, mapped by said mapper, and conditioned by said pulse shaping  
circuitry.

**17. (Canceled)**

**18. (Currently Amended)** The transmitter of claim ~~47~~ **15** where said  
demultiplexer develops an  $L$  plurality of signal streams, where said channel coding  
encoders develop rates  $R_i$   $i=1,2,\dots,L$ , that are such that  $R_1 > R_2 > \dots > R_L$ .

**19. (Amended)** The transmitter of claim ~~47~~ **15** where said demultiplexer develops  
an  $L$  plurality of signal streams, where said channel coding encoders develop rates  $R_i$   
 $i=1,2,\dots,L$ , that are such that  $R_1 < R_2 < \dots < R_L$ .

**20. (Amended)** The transmitter of claim **15** where said channel coding encoder  
performs trellis encoding or convolutional encoding.



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Henry Brendzel

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Complete if Known		
	Application Number	09/300,494	
	Filing Date	4/28/1999	
	First Named Inventor	Arthur Robert Calderbank	
	Examiner Name	Chieh M Fan	
	Group/Art Unit	2634	
Total number of pages in this Submission: this page, plus 6		Attorney Docket ID	Calderbank 19-6-42

ENCLOSURES (check all that apply)		
<p>If Fee Form is <b>not</b> included, but a fee is due, the Commissioner is Authorized to charge Deposit Account No 500732 of <b>Henry T. Brendzel</b>, and consider that appropriate requests have been made.</p> <p><input checked="" type="checkbox"/> Fee Form (<input checked="" type="checkbox"/> Check included)</p> <p><input type="checkbox"/> Amendment/Response <input type="checkbox"/> After Final</p> <p><input type="checkbox"/> Affidavit(s)/Declaration(s)</p> <p><input type="checkbox"/> Extension of Time Request</p> <p><input type="checkbox"/> Information Disclosure Statement</p> <p><input type="checkbox"/> Certified Copy of Priority document(s)</p> <p><input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.2 or 1.53</p>	<p><input type="checkbox"/> Declaration (no Missing Parts Notice)</p> <p><input type="checkbox"/> Assignment Papers (for an Application)</p> <p><input type="checkbox"/> Drawing(s)</p> <p><input type="checkbox"/> Licensing-related Papers</p> <p><input type="checkbox"/> Petition Routing Slip (TO/SB/69) and Accompanying Petition</p> <p><input type="checkbox"/> To Convert a Provisional Application</p> <p><input type="checkbox"/> Power of Attorney, Revocation or Change of Correspondence Address</p> <p><input type="checkbox"/> Express Abandonment</p> <p><input type="checkbox"/> Terminal Disclaimer</p> <p><input type="checkbox"/> To Convert to Statutory Invention Registration</p>	<p><input type="checkbox"/> Postcard(s)</p> <p><input type="checkbox"/> Small Entity Statement</p> <p><input type="checkbox"/> Request for a Refund</p> <p><input type="checkbox"/> After Allowance Communication to group</p> <p><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences</p> <p><input type="checkbox"/> Appeal Communications to Group (Appeal Notice, Brief, Reply Brief)</p> <p><input type="checkbox"/> Proprietary Information</p> <p><input type="checkbox"/> Status Letter</p> <p><input checked="" type="checkbox"/> Other Request for Reconsideration, Petition to Waive Rules, Petition to revive.</p>

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm or Individual Name	Henry T. Brendzel	
Signature		Date 4/23/04

CERTIFICATE OF MAILING		
I hereby certify that this correspondence is being deposited with the United States Postal Service as service in an envelop addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA22313-1450 on this date: 4/23/04		
Henry BRENDZEL		4/23/04
Name of Person Signing	Signature	Date

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